

(No Model.)

2 Sheets—Sheet 1.

A. SCHAUB.

AUTOMATIC RAILWAY SIGNAL SETTING AND RELEASING MECHANISM.

No. 497,556.

Patented May 16, 1893.

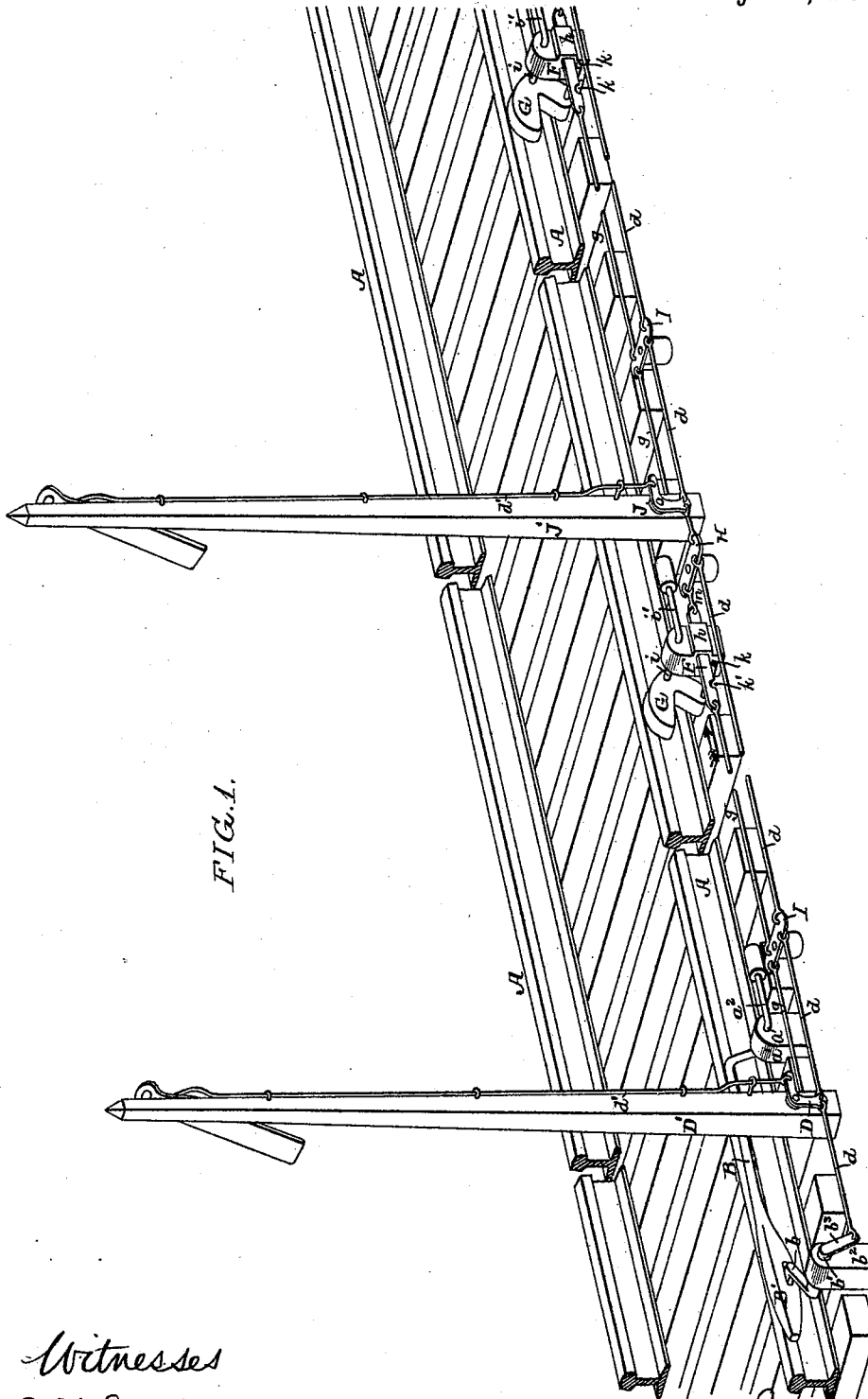


FIG. 1.

Witnesses
A. V. Groupe
R. Schleicher.

Inventor
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by his Attorneys
Robson & Robson

(No Model.)

2 Sheets—Sheet 2.

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No. 497,556.

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FIG. 3.

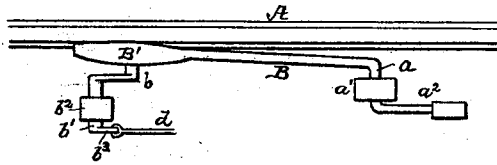


FIG. 4.

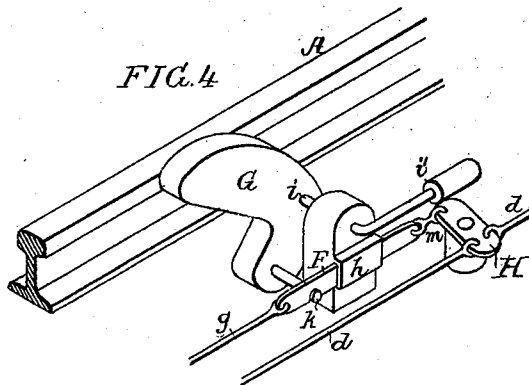


FIG. 5.

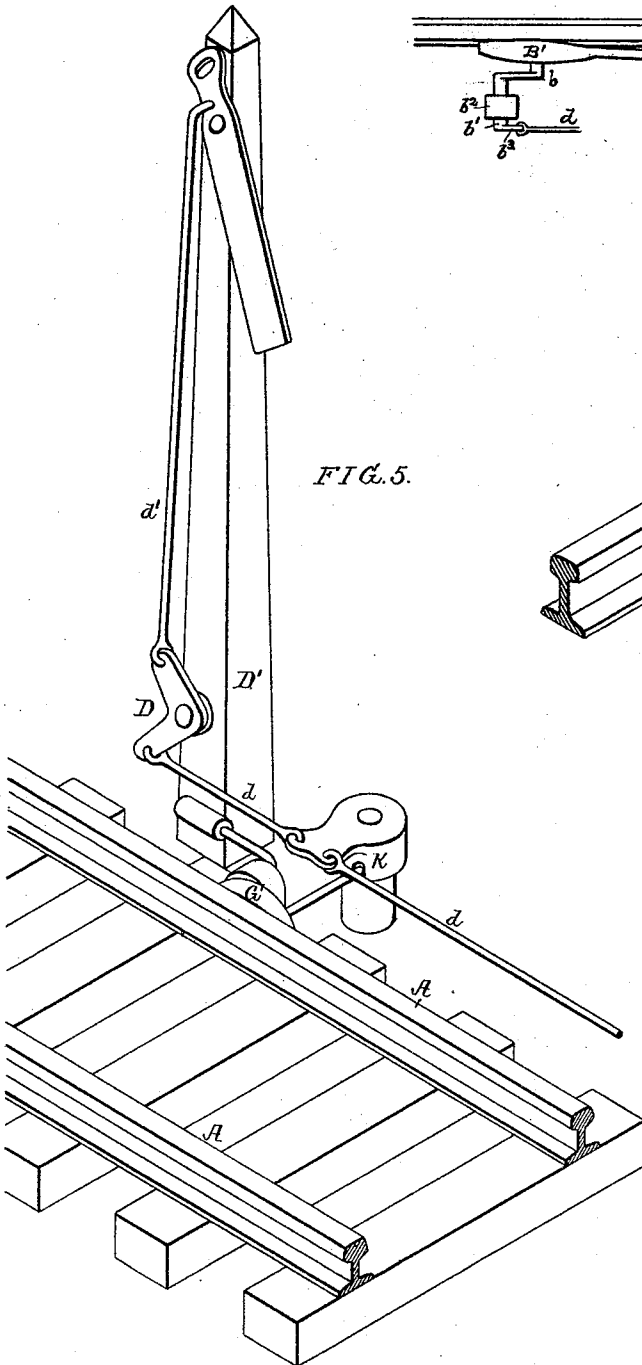
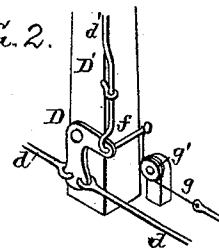


FIG. 2.



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UNITED STATES PATENT OFFICE.

ADOLPH SCHAUB, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF THREE-FIFTHS TO FRANK GILLET AND JOHN C. SCOTT, OF SAME PLACE.

AUTOMATIC RAILWAY-SIGNAL SETTING AND RELEASING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 497,556, dated May 16, 1893.

Application filed February 2, 1893. Serial No. 460,661. (No model.)

To all whom it may concern:

Be it known that I, ADOLPH SCHAUB, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented certain Improvements in Automatic Railway-Signal Setting and Releasing Mechanism, of which the following is a specification.

The object of my invention is to provide simple and effective mechanism whereby railway signals may be set and released by a locomotive or car traversing a track, so that warning may be given to a following train or to a train approaching on the same track, the device being also applicable to the setting of signals at points where one road crosses another.

My invention comprises certain details in the construction of such mechanism, all as fully set forth and specifically claimed hereinafter.

In the accompanying drawings:—Figure 1, is a perspective view of sufficient of a railway track and series of signals to illustrate my invention. Fig. 2, is an enlarged perspective view of part of the signal-setting device. Fig. 3, is a plan view of part of the same. Fig. 4, is an enlarged perspective view of one of the signal releasing devices showing the same in a different position from that represented in Fig. 1; and Fig. 5, is a perspective view of the mechanism adapted for use as a crossing signal.

A A represent the rails of the track alongside of one of which rails extends an arm B carried by a rock shaft a adapted to a suitable bearing a' and having a weighted arm a^2 which tends to raise the outer end of the arm B and with it a block B' which lies close alongside of the rail A, and, when in the elevated position, projects somewhat above the tread of said rail, the outer end of the block, however, being beveled so that a car wheel approaching the point of the block will depress the same. The block is also beveled laterally from the front to the rear end so that a car wheel approaching the same from the rear will not depress the block but will simply move it sidewise to a slight extent, the elasticity of the arm B permitting such movement. The block B' is connected by an arm b to a rock shaft b' which is adapted to

turn in a suitable bearing b^2 and has another arm b^3 , the latter being connected by a wire d to a bell crank lever D at the foot of one of the signal posts D' the latter having at the upper end a semaphore or other ordinary form of signal which is connected by a rod d' to one arm of the lever D. From this arm of the lever D also extends an arm f (see Fig. 2) which is connected to a wire g the latter passing round a pulley g' and being connected to a slide F suitably guided on a bearing block h in which is mounted a rock shaft i having at one end a block or arm G and at the other end a weighted arm i' . From the block G projects a finger k which engages with a notch k' on the underside of the slide F and said slide is connected by a wire m to a lever H which is also connected to the wire d , one or more levers I being also, by preference, interposed between the wires d and g at suitable points so as to permit of the use of short wires and lessen the strain and liability to stretch which result when long wires are employed. When a wheel passes over the block B' the latter is depressed thus pulling upon the lever D so as to raise the signal and at the same time pulling upon the slide F so as to draw the same in the direction of the arrow Fig. 1, until it is caught and held by the finger k of the block G. When the car has traversed the distance between the signal post D' and the block G (which may represent any desired distance) the wheel of the car or locomotive bears upon the block G and depresses the same so as to withdraw the finger k from the notch of the slide F, thus releasing the latter, and permitting the signal arm to fall, because of the weight of its projecting end, the block B' rising so as to be in position to be again struck and depressed by the wheel of another engine or car in order to again set the signal. It will thus be seen that a train entering upon a section of track constituting a "block" automatically sets the signal at the rear end of the "block" on entering the same, and automatically releases the signal at the rear end of the "block" when it leaves the front end of the same, and it will be apparent that this idea may be extended so as to set any desired number of signals in advance of the train and to release

them, one after the other, in the rear of the train by simply multiplying the signal posts and connecting the setting device with the signals thereof, a releasing device being provided for each signal.

In Fig. 1 of the drawings, for instance, I have shown two signal posts D' and J' the lever D of the post D' being connected to the lever J of the post J' and the releasing device for the signal of the latter being precisely the same as that for the signal carried by the post D'. This mechanism for setting signals ahead of the train is of advantage on curves, especially in single track roads where trains may be running in opposite directions on the same track, as the signals set ahead of one train will indicate its presence to another train approaching it while the two trains are out of sight of each other. In this case it is well to place signals and operating devices therefor on both sides of the track, the signals for one side of the track being set and released by the train traveling in one direction and those on the opposite side by the train traveling in the opposite direction, so that each train will give notice of its presence to the other, the signals on one side of the track indicating the presence, ahead, of a train running in the same direction as the one which is signaled, and the signals on the other side of the track indicating the presence, ahead, of a train running in the opposite direction from that which is signaled.

It will, of course, be understood that the wires connecting the various levers and slides are flexible so that while they will transmit a pull from one element to another, they will not transmit any movement in the opposite

direction but will yield because of their flexibility. The mechanism can also be used with advantage for setting and releasing signals at road crossings. For instance, in Fig. 5, I have illustrated such a device, the setting of the signal being effected by means of similar devices to those described and the releasing of the signal being effected by the depression of a block G' which has an arm engaging directly with a lever K forming one of the elements of the signal setting device.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. The combination of the signal post and its signal, the lever connected to said signal, a block or arm adjacent to the track and connected to one arm of said lever, a catch slide located some distance beyond the signal, and connected to both arms of said lever, and a retainer for said catch slide having a block or arm adjacent to the track, substantially as specified.

2. The combination of a series of signal posts and signals, one in advance of the other, with a block or arm adjacent to one of the rails of the track, and connected to the setting devices for each of said signals, a catch or retainer for said signals, and means for tripping said retainers in succession as the train passes them, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ADOLPH SCHAUB.

Witnesses:

FRANK E. BECHTOLD,
JOSEPH H. KLEIN.